

it is possible to install in it also other applications which utilize the characteristics of the device **4** as a small portable computer. An example of such an auxiliary application could be a pocket calculator program, which in view of the large display **12** would be able to process mathematical information containing even complicated graphical information, in the same way as e.g. the known scientific calculators manufactured and marketed by Hewlett-Packard Company. Another example of an auxiliary application could be an electronic dictionary, which, from the databases stored in the memory means of the device, could find foreign language equivalents of words input by the keypad **15**. The device can also automatically or at the request of the user translate simple messages e.g. into English when the device detects that the country code of the receiver's telephone number represents a country where English is spoken. Such auxiliary functions are programmed processes known per se, which can be stored in the memory means of the device **4** in such a format that can be executed by the microprocessor controlling the operation of the device.

The stability of the device according to the invention, when opened and placed on a table or a similar even surface during the use of the second user interface, plays a significant role in the ease of use that the user experiences. It is preferable that the second half of the device, that is, the one which includes the large alphanumeric keyboard that is visible when the device is open, is heavy enough to keep the opened device balanced. A suitable distribution of mass is achieved by placing a majority of the heaviest structural parts in said second half. An advantageous embodiment of the invention includes in the second half for example the microphone and the speaker that functionally belong to the telephone interface, as well as the radio frequency transceiver parts and most of the electronics that realize the operations of the second user interface. When reference is made in this patent application to the fact that the telephone microphone and speaker are parts of the first user interface (the telephone interface), which is located substantially on the outer surface of the device, it should be understood that the microphone and speaker may actually be inside the device, as long as the outer surface has suitable openings to act as means for channelling sound to the microphone and from the speaker. In the embodiment described above with the microphone and speaker in the second half, these openings **5** and **6** may be on the other side of the (closed) device than the rest of the telephone interface parts **7, 8**, like in FIG. **6**.

According to the inventive idea related to the presented invention a small-sized mobile phone can be provided with auxiliary functions requiring a larger user interface, so that the device is foldable and that the larger user interface is found within the device. With reference to FIGS. **2** to **4** above we discussed an embodiment in which the device unfolds as two parts. According to the same inventive idea the device could also be made so that it unfolds in three parts according to FIG. **5**, or in still more parts in other embodiments. For example in the embodiment shown in FIG. **5** the large display **12** of the device comprises two sections, whereby we obtain a total display area, which corresponds to about twice the cross section of the folded device, and still there is room for a complete QWERTY keyboard **15**. A person skilled in the art can easily design further alternative embodiments, in which the display and keypad sections are divided in different ways on the surfaces of the unfolding sections of the device according to the invention.

It is known that a user interface of the mobile phone type corresponding to the first user interface of the invention

presented above can also be realized without a display. In one embodiment of the present invention, where we aimed at minimal production costs, the first user interface comprises only a microphone, a speaker and a numerical keypad. The first user interface could even be only a pager, whereby it does not contain any microphone or speaker, but contains a small display. Then of course it is not possible to make any calls with the device.

Speech, telefaxes and graphical information between users can be communicated with the device according to the invention, which already may be considered as quite versatile communication, taking into account that the device according to the invention resembles a common mobile phone regarding its size and appearance. The device is easy to use, which is particularly enhanced by the fact that it has a telephone user interface which is the same as in an ordinary mobile phone, and the parts belonging to its user interfaces are of a sufficiently large size. The familiar QWERTY order of the alphanumeric keypad also represents the easy to use features.

What is claimed is:

**1.** A portable communication device (**4**) for transmitting information in electrical form between a user and a certain data communication system, characterized in that it comprises:

an outer covering (**10, 11**) including upper and lower halves which can be moved between a folded condition and an unfolded condition by actions of the user, said lower half (**11**) containing the heaviest structural parts of said portable communication device including a microphone (**5**), a speaker (**6**), and sound channelling means for directing sound to the microphone from the speaker, said lower half (**11**) being substantially heavier than said upper half (**10**); and in order to realize the interaction between said communication device (**4**) and the user, as separate items:

a first user interface in said lower half (**11**) with first input means (**5, 7, 8**) and first indicator means (**9**); and

a second user interface in said upper half (**10**) with second input means (**13, 14, 15, 16, 17**) and second indicator means (**12**);

of which said first user interface comprises parts (**5, 6, 7, 8, 9**), which are located substantially on the outer surface of said outer covering (**10, 11**), so that they can be used when said upper and lower halves are in the folded condition, and of which said second user interface comprises parts (**12, 13, 14, 15, 16, 17**), which are located substantially inside said outer covering (**10, 11**), so that they can be used when said upper and lower halves are in the unfolded condition, said portable communication device being balanced for firm placement of said lower half (**11**) of said outer covering on a substantially flat level surface, with said upper half (**12**) of said outer covering positioned such that the included angle between said lower half and said higher half is less than 180°.

**2.** A communication device (**4**) according to claim **1**, characterized in that said first and second user interfaces can be used independently of each other.

**3.** A communication device (**4**) according to claim **1**, characterized in that said first user interface is substantially a telephone user interface for the two-way transmission of speech and comprises sound channelling means (**5, 6**) for directing sound to a microphone and from a speaker, and keys (**7, 8**) to control the operation of the device (**4**) and to enter data into the device.

**4.** A communication device (**4**) according to claim **3**, characterized in that said outer surface of said outer covering